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ABSTRACT

Electronic teaching via the Internet has its rewards and frustrations. In asynchronous distance learning, students have their own passwords to reach the course site on the Internet. An interactive software program allows them to post messages to one another and follow the thread of conversation. Unlike a traditional class that meets once or twice a week, students in electronic courses participate many times in a week. The biggest intellectual and behavioral hurdle for faculty and students is overcoming the anxiety caused by the disunities of time, space, and action. Benefits are as follows: forum for participation at convenient times and places; time for students to read and craft responses; improved student writing and research skills; more student participation; and written records. Problems include the following: an initial steep learning curve; difficulty in discussion closure; faculty adjustment to more student comments; heavier student workload; importance of literacy and writing skills; and no face-to-face contact. Support issues are help for faculty in course development; technical reliability; and student frustrations with Internet providers and equipment limitations. Graduate student participants cite benefits of electronic teaching. The widespread worldwide availability and demand for electronic courses and degrees and the importance of recognized educational credentials will propel the establishment of international standards. (YLB)

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Paper presented at the National Autonomous University of Mexico (UNAM)
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## Abstract

This paper presents an analysis of significant issues associated with the development and implementation of graduate level electronic courses via the internet. Data from Stony Brook's Electronic Extension Program (EEP) as well as other models is reviewed relevant to faculty teaching styles, student participation, faculty and student workloads, confidentiality, quality assessments, accreditation, and implications for higher education. The paper includes a representative sample of questionnaire data obtained from students attending a graduate electronic course.

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## Introduction

The emergence of the Internet as a venue for higher education has been explosive. Within the past five years electronic courses taught through the World Wide Web (www) have grown into the thousands. Participation in 1996 was estimated at one million students in North America, projected to triple by the year 2,000 while traditional college enrollment is seen as leveling off during the same period. Most all universities in the USA offer some Internet based courses. But this revolution in distance learning is truly world wide with global participation at both the institutional and individual level. In fact there are now large, degree granting, colleges which exist solely electronically, without conventional buildings, classrooms, libraries, faculty, and students. Internet courses have clearly emerged as the technology-of-choice for part-time adult students who cannot physically attend classes, either because of situational or dispositional barriers. This trend appears to be accelerating with greater speed driven by still unmet student demand and the educational success of internet based electronic courses. This presentation reviews some of the rewards and frustrations of electronic teaching at the university level. The administration of Stony Brook's Electronic Extension Program (EEP) is also analyzed with attention to faculty development, student support, program quality and evaluation, and other contextual issues bearing upon this new educational modality.

I will be speaking from the perspective of someone who is an advocate for electronic teaching in that I have supported the creation and development of Stony Brook's EEP and teach both electronically and face-to-face in traditional classroom formats. This term at Stony Brook I am teaching a graduate seminar "Leadership in Organizations" electronically and I am also teaching a face-to-face seminar on the "History of Adult Education" at Teachers College, Columbia University. But even in this course I am using computer technology in the form of a class wide listserv by email as a way of maintaining contact among my students between classes. This illustrates a point I will make in my talk concerning the co-existence or superimposition of one modality on top of another. I believe in a pragmatic approach related to the situation that is incremental and progressive. And I encourage an orientation of ongoing experimentation towards teaching and learning. Only in this manner will we be able to achieve improvements in education.

## What is Asynchronous Distance Learning?

As I wrote this talk on my computer and sent various drafts electronically and effortlessly to colleagues hundreds, if not thousands of miles away, I realized how pervasive and user friendly some forms of computer mediated communication have become for many, even for people like myself who are technophobic to some extent. I cope and I experiment, and I endure frustration. Modern office technology incorporates email and concomitantly internet access, which is estimated to be growing at 10-15% each month. Based upon this rate of expansion there has been projected the number of 20 million online information users currently in the USA; an amazing number in such a short period of time. How many million more are there worldwide? We have gone from DOS to Windows based applications; new releases of familiar programs regularly bombard us engendering an envirnment of constant training and continual learning. We swim or sink in this technological

soup.

The root of ADL is asynchronous communication. In its most simple form, I send you an electronic message which you receive and respond to at a different and later time. Unlike a telephone conversation in which we speak together synchronized in real time, asynchronous communication and ADL violate the unity of time. Interestingly the telephone allowed us to overcome in our conversations the unity of physical space but preserved the unity of time. In the conventional classroom (or auditorium) there is both unity of time and space and action. It all takes place here and now. For those today at distance sites in Mexico (Guadalajara and Colima) it is somewhat altered in that real time television provides the semblance of unity in those three dimensions, but we know it is different. Tactile, visceral, affective, even emotional elements are missing. Now, how much of that is critical to effective communication of ideas, or more importantly good teaching? And here, today, another complication in that I am being interpreted. I recently read a novella by Carlos Fuentes ("The Two Shores") in which Cortes' interpreter, Jeronimo de Aguilar, claimed to distort the conversation between Moctezuma and Cortes, thus profoundly altering the sequence of events between those two men and the course of Mexican history. My talk today does not carry the same level of import, but it is inevitable that some degree of nuance will be lost. I have been studying Spanish, but I need much more time for any virtuosity on this score.

In a regular college course meeting over the span of a semester there is unity of time, space, and sequential unity of action from one meeting to the next. In the ADL course, there is neither unity of time, space, nor action. Yet it all seems to hold together. Here is a brief description of how it works.

Students who are enrolled have their own passwords to reach the course site which is located on the Internet. The courses use an interactive software program

(Caucus, Lotus Notes Learning Space are two examples) that allows all students to post messages to one another and follow the thread of conversation.

It is similar to email in that all entries are submitted and distributed electronically. These interactive software programs differ from conventional email in several important respects. First, all students have through the conference program simultaneous access to all other students in the class. Student submissions are displayed sequentially in what is called a threaded conversation that preserves an historical record of all submissions. So for example, I the instructor, have distributed to all students a copy of my syllabus and reading list. For the first assignment I may post a question based upon readings, such as, "If effective leadership behavior can be analyzed into a number of measurable traits or abilities, why not select leaders based upon test performance? " As students contribute their responses a thread of conversation is posted and developed. Ideally, each student reflects upon and comments on the preceding submissions.

Unlike a traditional class which may meet once or twice a week, students in electronic courses drop into class and participate many times over the period of a week. I require that students in my courses log on minimally three times a week for approximately an hour. I do the same, contributing my thoughts and observations to the discussion, helping to move it along so that important curricular issues are covered. Bear in mind that we are all logging on at times convenient for us, which will vary by participant. I will generally log on Tuesday and Thursday evenings, and perhaps one morning on the weekend. Many students do most of their logins on the weekends. Students log on from home or work, or if they travel, from their hotel rooms.

In a one week period, a class of 20 students will contribute upwards of 60 messages for each discussion theme. This is a lot of interaction, more so than in the

conventional class in which not all students participate. After a week, we progress to the next item in the syllabus following the same format. I have also introduced the modification of volunteer student discussion leaders or DL's who take the responsibility for moving the discussion along. Each week there are different DL's who put their own twist or spin on the material.

The biggest intellectual and behavioral hurdles for faculty and students to clear is overcoming the anxiety caused by the disunities of time, space and action, and the numerical superiority of student comments to those of the instructor. Moreover, being together physically in the same room (or being able to see each other) provides visual cues that can be reassuring and familiar. In a short period of time we can if so motivated create a sustaining educational community in which we achieve a type of symphony of learning very much life a performance. This at least is the ideal face-to-face, as well as electronic, learning environment.

In truth, as in life, reality can fall short of the mark. Large classes at inconvenient times, rooms that are too hot, cold, stuffy, indifferent fellow students, rigid and unimaginative pedagogy, and a hundred over variables conspire to deflate expectations and value. Even in small classes it is hard to always be in top form as an instructor, and for students, barriers of scheduling and inhibitions to full participation can still obtain. Moreover, it is maintained that gender, racial, economic, social, psychological, and behavioral differences, including verbal facility, combine to create an uneven playing field for students in face-to-face classes where spontaneous behavior can overwhelm more thoughtful participation.

Now in contrast, visualize the electronic course as a forum when all can participate at times convenient for them without having to physically come to the college. This includes faculty, who in my case, do not have to stay late to teach in the evening after a full day of work. Students have time to read and craft their responses to the

questions and comments posted. It is less of a performance for the instructor and more of a group collaborative effort to achieve collective understandings of the subject material.

In addition to the online discussions, students have the full complement of written assignments including reports and term papers which they can submit electronically, or by fax or by mail. These can also be electronically posted to other students in the class so that each can see what others have written. This last feature is usually logistically impossible in traditional classes. Students may also communicate privately with the instructor or with each other, one-to-one by email. And there is always the possibility for phone conversations and office meetings.

## Additional Benefits of Electronic Teaching

- Students initially baffled by the differences between face-to-face and electronic courses quickly adapt in the same way that earlier generations adapted to the abstraction of telephone communication between parties at great distances.
- Technical problems are minimal, and since technology is portable, students can usually always "attend" class either logging on at work, home, or from the field.
- Student writing and research skills improve. Responses are carefully written and not always spontaneous "top of the head" utterances.
- Source material is more closely read and skillfully woven into comments.
- Students participate more. Psychological, physical, and social barriers can be mitigated.
- There is a permanent written record of all student and faculty contributions which can be studied and reviewed at any time by all participants.
- The frequency of student log-ins can be monitored since the software

program in use indicates to what extent students have read the online postings of other students. The instructor can then follow-up with students who do not appear to be participating.

- Sharing of projects helps other students broaden their understandings promoting a true learning community.

All of the foregoing promote the creation of a high quality learning environment. From an administrative perspective, shortage of physical classroom space is not a problem. Nor are questions of adequate parking and facilities support which tend to be problematic for part-time students and faculty. Students learn how to access the internet directly from the electronic class and use the www as a source of information. This promotes the development of "hypertextuality" in that internet links can be readily established and used by <u>all</u> class members. Guests from other locations can participate.

## Problems with Electronic Teaching

- There is an initial steep learning curve for faculty and students as each develops familiarity with the electronic environment. Administrative support in the form of a "help" desk is needed since problems with technology can undermine confidence in the learning environment.
- Discussion closure can be difficult because the asynchronous environment can often be characterized as rambling, discontinuous, and informal.
- A persistence of belief in the values of a traditional classroom "lecturing" model can engender perceptions of instructor passivity as faculty adopt a discussion leadership model required in the virtual classroom.
- Faculty need to adjust to the much greater number of student comments compared with their own. For those who developed their pedagogy within a teacher-driven classroom, this may raise questions of "who is in control"?

- The requirement for continual involvement and participation entails a heavier workload- three times per week instead of just showing up for one class. Students who are not sufficiently self-disciplined or motivated, or who are unprepared for the heavy workload requiring sustained participation, can quickly fall behind Opportunities still exist in electronic courses for minimal participation at a low level of quality
- The importance of literacy and writing skills. Often underdeveloped in students, they become aware of this deficiency and have to work much harder than in conventional classes. It is the reverse of conventional classes wherein verbal facility dominates. Each medium has its own strengths.
- Lack of face-to-face contact and the issue of "identity." Students may wonder, "How can the instructor possibly "know" me? How can other students know what I am like?" This has been referred to as the "loneliness of the long distance learner." Related is the subject of "scrutability." How do I, as the faculty member, know it is "you" who is doing the work, and not an imposter? I will return to this at a later point.
- There is a need to inculcate critical skepticism to material posted on the Internet. How do students determine "truth" ? Access to a wealth of electronic material can be visually seductive. In the same way we caution students to establish critical distance from conventionally printed texts we must also do so for electronic information. In addition, students must maintain a commitment to traditional sources of scholarly information in hard copy texts and journals.
- Inability to physically bring in guest speakers who are not technologically literate. Other forms of "spontaneous" behavior, such as a last minute substitute lecturer are not possible, although in time I am sure that this problem will vanish as more people adapt to electronic teaching.
- And the most important criticism for many, the inherently discriminatory nature of the electronic environment in that it excludes the economically and

technically disadvantaged.

## Issues of Student and Faculty Support

- A "help" desk is essential to assist students and faculty navigate the technical and behavioral requirements (called "netiquette") of electronic courses. Initially, at Stony Brook, we also provided a pre-class face-to-face meeting where students could meet their instructors. We subsequently determined that this was not necessary and have eliminated this feature.
- For faculty, assistance on how to conceive of and develop an electronic course. The virtual classroom is not a lecture hall, but an electronic seminar in which people come into the room electronically make their comments and leave, come back, leave, etc.

Fortunately, there is a fast learning curve owing to the ubiquitous nature of electronic communications. People participating in these courses have already achieved a comfort level with technology and regularly use email. Moreover, they have each weighed the positives vs. the negatives of participation.

- It is important that there be technical reliability at each stage. Stony Brook's Electronic Extension Program uses an external company to provide the conference software and server. There is a fee for this that we pass on to each student.
- Student frustrations with their own internet providers (there can be delays during periods of peak use) and sometimes with the limitations of their own equipment. Fast processing speed, large memory capacity, and graphical web browsers are mandatory. Sometimes students who use workplace computers find that their employers have erected "fire walls" to prevent unauthorized access to the internet.

- Faculty must be available to students outside of the electronic course. Contact modalities can include email, fax, telephone, and office visits.
- There is the need to continuously evaluate new software developments. Also, as electronic programs evolve, problems of project management emerge such as course scheduling, recruitment of new faculty and students. There is the ongoing concern regarding perceptions of program quality.

## The Question of Quality

Where is quality? Where does it reside? In format? In faculty? In students and their participation? Within the "institution" ?

We all harbor suspicions of technology. Within the educational community, technology has been oversold to us each time including educational television, computer mediated instruction (teaching machines), CD Roms, audiotapes, etc. At the same time, there is the durability of the conventional instructional model and the comfort level that we have established with it, despite its shortcomings. We value the efficiency of one person in a classroom or lecture hall talking to many. And also the atavistic preference for the unities of time, space, and action including the physicality of being together and the shared response to a performance which is common element in our arts.

But we realize, that quality does not reside in the format. Our own experience of being in poor classes with uninspired faculty and boorish classmates tells us that much. Evening students (and faculty) in particular just trying to stay awake, much less optimally participate show the downside of exclusive reliance on face-to-face models.

How does one judge quality? Faculty customarily use the following modes (and logic) of assessment: At the end of the course what levels of understanding of the material have students achieved? What measures are needed to assess comprehension and mastery? How does achievement compare with students in

conventional classes? How does the quality of written work and research compare? What have I sacrificed (and gained) in this electronic course?

I mentioned earlier that the electronic course preserves a written record of all student and faculty contributions. These, in addition to other required written work (reports, term papers, written exams), provide multiple assessment opportunities. These numerous submissions help to create an extensive personal academic profile for each student which becomes the basis for judgments of authenticity or identity. In the future new software programs will determine "write-print" identity based upon samples of student writing submitted earlier in the semester.

In all of the conferences I have attended on electronic teaching, faculty maintain that they can assess the authenticity of student work. In that most electronic courses enroll fewer than 20 students, this seems true. My own personal experience thus far also confirms the experiences of others.

## Student Perceptions of Electronic Courses

Here are some comments from questionnaire distributed in my Spring '97 graduate course, "Leadership in Organizations" in which students were asked to reflect on the virtual classroom. The questionnaire was mailed to students and the responses were anonymous:

"It is certainly better to be able to log on many times a week instead of trying to absorb [at one sitting] a 3 hour lecture.'

"[I liked] the flexibility of the course. This is essential to someone of my age, in my point in my life, in my career. Although I would likely have signed up for the traditional face-to-face version, at this point in my life I'd have had to withdraw and perhaps never to take it again. I'd have regretted that, given what I've gained

already."

"It helps to compensate for shyness."

"There is no limit to the completeness one wants to offer to others. "

"Development of my own writing skills. In face-to-face I sometimes speak before thinking thoroughly and then am not always accurate. This medium allows me a leg up on that deficiency....in the additional time I can read, think, and review."

"I like the interaction and the close connection to text readings."

"The Internet world is bigger and contacts much larger than a typical classroom."

"The medium provides for very candid conversations. Everyone was able to express their ideas openly."

The benefits these students cite are also widely found in the research literature based upon the experiences of hundreds of students and many faculty. In one study, the frequency of one-to-one electronic contact between students was credited with creating very close personal bonds between students, more so than in conventional classes. It is not surprising then when these students express a level of belonging and togetherness that is in sharp contrast with their earlier expectations of isolation and anomie.

## Electronic Teaching and the Curriculum

We need to consider the place of electronic teaching within the total curriculum. I am writing now from the point of view of a Dean of a traditional program, rather than as the director of a "virtual university." We need to ask what portion of a student's program should be electronic? Should students be able take their entire program electronically without ever coming to campus? Strong and divergent responses are certain.

For traditional college age undergraduates, many observers suggest that physical attendance promotes social maturity and the enhancement of other developmental skills, which presumably adult students have already obtained. Issues of advisement, access to campus resources such as the library and counseling, and belonging to a campus "community" are further advanced as arguments for limitations on electronic courses. But, I personally believe that as the number of people with computer mediated education increases and as campuses become more "wired" for computer technology, resistance will lessen. It has also been observed that younger people are more comfortable with technology than their elders. So it is safe to assume that each succeeding generation of students will be more accepting, even anticipating, the use of educational technology.

Some faculty have raised objections about workloads and course ownership and have taken a critical "wait and see" position as campus leaders wrestle with the implications of electronic teaching. But, as the demand for and supply of electronic courses continues to grow, it seems clear that a decided shift in the direction of acceptance has already occurred and it is only a matter of time before all educational institutions incorporate the virtual classroom, much as they have accepted and come to value the beneficial role of the computer as an essential tool. Economies of scale will still uphold the large lecture class, but even in those cases the use of listservs and electronic discussion groups will add further depth to what have been largely passive and uninspiring activities.

## Accreditation

I would now like to turn to accreditation which is a provocative dimension of virtual education. As long as internet courses are sponsored by traditional institutions, accreditation issues are manageable. This is because this latest iteration of distance education follows in a rather well worn river bed of correspondence and televised

education going back almost a hundred years in the case of the former. But when new institutions emerge which are entirely electronic, and they can easily enroll students from all over the world, a new era of competition and quality assessment arises.

In September 1997 I attended a meeting in Washington DC of a newly formed organization, the Global Alliance for Transnational Education (GATE) which has set for itself the task of creating standards for credentialing international providers of electronic distance education. It was argued at this September meeting that the public needs assurance that courses and degrees from colleges and universities in different parts of the world have met baseline standards of quality. But, even at this conclave the opinion was by no means unanimous that international accrediting standards should be developed, much less applied.

At present accreditation of colleges and universities can follow a variety of patterns. In North America there is voluntary institutional accreditation by a number of regional organizations. These have just recently come together to form a national oversight body, the Council for Higher Education Accreditation (CHEA). In addition, many professions have their own criteria for program accreditation that apply to all institutions offering programs in those content areas. Moreover, national traditions worldwide engender differing approaches to this subject of institutional and program accreditation.

The widespread worldwide availability and demand for electronic courses and degrees and the importance of recognized educational credentials will undoubtedly propel the establishment of international standards, probably sooner than we realize. Already we have seen the printing of consumer guides to these programs so that potential students may have some means of making sound decisions. The public will demand both quality control and value. Many observers predict a very

dynamic period wherein newly formed electronic schools will successfully compete with their older, more traditional rivals.

## Conclusion

Historians of higher education will recall how scarcely thirty years ago, nontraditional programs for adults combining independent study, intensive but brief on-campus tutorials, and televised courses made college attendance possible for thousands whose ambitions were previously thwarted. The British Open University (chartered in 1969) and its many imitators come to mind. We are now clearly standing upon, if not beyond, the threshold of new developments in electronic distance learning which have even greater potential to unlike the riches of higher education for countless men and women. It is essential that we face this challenge with an open mind, without prejudice, and a with sense of optimism about the improvement of our human condition. Higher education, like all education, has always been a utopian project, in the best sense of the phrase, concerned with the development of a better world. I am sure that decades from now we will look at the current period with a sense of bemusement, as we scratch our collective heads worrying about new technical problems and still yet countless opportunities.